

Remarks

The present invention relates to an adjustable extension for a driving tool such as a ratchet. Applicant's extension includes an outer member within which an adjustable extension is telescoped. The adjustable extension has a rack between its distal and proximal ends. According to Webster's New World Dictionary, Third Edition, a rack is "a toothed bar". A pawl with a handle is mounted on a spring biased axle in a notch opening on a window in the outer member. The handle is spring biased against the notch such that the pawl engages one or more of the teeth of the rack.

The construction described above allows finger tip control of the adjustable extension. In addition, since the pawl and handle are mounted flush in the outer member, the adjustable extension fits into tight quarters and does not catch when it is driven (i.e., rotated) by the driving tool. This is important in working on engines in modern automobiles. The engine compartments of which are complicated with pollution control and air conditioning devices requiring the components to be closely packed in the engine compartment. The bolts holding the components more likely to fail, such as the fuel pump, generator, air conditioner tensioner and serpentine belt, sometimes are very difficult to reach in the confined space.

It is believed that the amendments to the claims overcome the claim rejections which are addressed in the order stated in the above-mentioned Office action.

Paragraphs 1-2

In response to the rejection of claims 5, 13, 14 and 11-20 under 35 U.S.C. 112, second paragraph as being indefinite, applicant has:

Amended claim 11, in line 26 (misidentified in the action as line 24), so that there is antecedent basis for "one or more of the teeth of the rack." The rack when first introduced in the claim is identified as having "a plurality of teeth".

Claim 13 has been amended. The "extending to a location adjacent to" has been changed to "collaring". It is believed that this resolves the inconsistency among claims 5, 13 and 19 as to the dual role of guide member, serving both as a stop and as a collar.

Claim 14 has been amended by adopting the examiner's suggestion. The phrase "selectively engageable connections" has been substituted for "spring biased detents".

In Claim 16, the "means for spacing" has been rewritten. The longitudinally extending connector is described as "having an intermediate portion of smaller dimension between its proximal and distal ends for spacing the intermediate portion of the..."

Paragraphs 3-4

Applicant's claims 1-20 (misidentified in the office action as 16-20) were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent No. 2,963,930 to Clothier et al.

In Clothier et al., a locking sleeve 24 is provided as the control mechanism for controlling the extension of torque rod 18. A ball 31 is unseated when sleeve 24 is pushed over the distal end of body 10. A plurality of spaced apart recesses 22 are provided along torque rod 18 for selective engagement with ball 31.

Applicant's independent claims (i.e., 1, 11 and 16) all initially required the control mechanism to be a rack and pawl and have been further amended to require that the pawl and handle extension be seated flush with the outside of the outer member. It is also required that the pawl and handle be mounted on a spring biased axle. The spring biased axle allows for easy construction of the tool, a solution having no counterpart in Clothier et al.

There are several problems with Clothier et al.'s device which are overcome with applicant's tool: Clothier et al. issued in 1960. At that time, automobile engines were simpler and engine compartments were not so crowded. The outer member of applicant's tool is smooth (i.e., the push button control is flush with outer surface) whereas Clothier et al.'s locking sleeve 24 projects outward at the distal end where it is most likely to get in the way. Another difference is in the control. A ball seated in a round socket is not as secure as a tooth (or teeth) of a pawl latched into the teeth of a rack. Sometimes, it is necessary to apply a strong compressive force on the extending connector to keep it in engagement with the nut that is being removed. It is very important, that the extending connector not

telescope, other than when a user wants it to telescope. A rack-and-pawl and ball-and-socket are not functionally equivalent. A rack-and-pawl is more secure. A rack-and-pawl also allows for finer adjustment than a ball-and-socket arrangement. For some purposes the ability to more precisely control the amount of extension is desirable.

Modifying Clothier et al. such that it has a rack and pawl control would require complete redesign of the reference. It is not seen how sliding locking sleeve 24 could be used as a way to selectively engage a rack and pawl.

Paragraphs 5-6

Claim 3 was rejected under 35 U.S.C. 103(a) as being unpatentable over Clothier et al. in view of U.S. patent No. 2,438,633 to Condor. Condor was cited as showing an extendable tool with a sleeve (a), and an extending rod (b) in which the means for limiting the movement of the rod (b) within the sleeve (a) is a stop (reduced diameter) at the proximal end of the outer member within the cavity.

Condor, like Clothier et al., uses a sleeve (a) to control the extension of bar (b). When sleeve (a) is rotated, a detent (f) clicks over the recesses (d) provided in bar (b). A separate spring loaded pin (p) "projects laterally from the bar and limits the longitudinal movement of the bar in both directions" (see lines 32-35 in col. 3).

Condor's sleeve (a) would get in the way and the detent (f) in recesses (d) arrangement does not provide fine extension control. While necking down the proximal end of Clothier et al. may or may not be obvious in view of Condor, like Clothier et al., Condor does not show a rack and pawl control mechanism mounted flush with the outer member and hence claim 3 and the balance of applicant's claims 1-20 are believed patentable over Clothier et al. in view of Condor.

Paragraph 7

Applicant's claims 1-20 were rejected under 35 U.S.C. 102(b) as anticipated by U.S. patent No. 4,376,397 to Newby et al. or obvious over Newby et al. in view of U.S. patent No. 4,409,866 to McBride or U.S. patent No. 4,906,015 to Mathews.

To resist compressive force, Newby et al. requires pins 152 (see 152A and 152B in Fig. 3) which are received in slots 166. Pins 152 are provided on the extendible member, slots 166 are provided in the outer member. This arrangement is provided to resist compressive forces during use as a back up to the spring biased latch (74) which is received in a selected one of detents (72) in the extendible member. Whereas in applicant's construction, the rack and pawl arrangement is strong enough that it does not require a back up system. It is also noted that securing means 70, unlike applicants pawl and handle extension is not mounted on a spring biased axle. Newby et al. provides no teaching or suggestion on this point.

McBride was cited as showing notches which are selectively engaged by a spring biased leg which is received in notches. This arrangement was taken to meet applicant's limitation a "rack with teeth". As stated above, a rack has a very specific meaning. A rack has teeth, it does not have notches. As a pawl moves from tooth to tooth along a rack, the pawl cams up or is stopped by the teeth depending on the slope of the teeth. McBride's leg and notch arrangement is like Clothier et al.s' and Condor's ball and socket arrangement. It lacks the fine adjustability of applicant's tool. McBride's spring loaded leg also projects above the surface of the outer member where it will interfere when space is at a premium (e.g., in car repair on modern engines).

Mathews was cited as showing teeth and a pawl. Applicant did not invent racks and pawls, he did however make use of them in a manner not done before and which is not obvious over Newby et al. in view of McBride (which does not have a rack) or Mathews. In Mathews, a pawl (42) with a sloped edge (43) is cammed in and out of engagement with the rack by means of sloped inner surface (45) of a sleeve 50. Sleeve 50 is spring biased so that pawl (42) is engaged. Pawl (42) is pivoted on a pin (48) in a pawl support ring 44.

Applicant does not have a sleeve on its outer member. In applicant's construction, the pawl and handle extension are pivoted in a window provided in the outer member and are substantially flush with the outer member. In applicant's

construction, the pawl and handle extension are mounted on a spring biased axle, not a pin.

In addition to missing elements (e.g., notch opening into window, spring biased axle, pawl with handle extension mounted flush with outer member, etc.), it is believed that Newby et al. cannot be modified along the lines suggested. That is, Newby et al. would have to be totally reconstructed to make use of a rack and pawl. Mathews' construction requires that the extendable member not rotate within the outer member otherwise the teeth would be brought out of engagement. Newby et al. needs to have an extendable member that rotates within the outer member to make use of pins 152A, 152B for locking the extension against collapse under compression. Removal of pins 152A, 152B and constructing the extendable member and outer member so that they cannot rotate with respect to each other would make Newby et al. inoperative for its intended purpose. For that reason the suggested modification is not motivated by the prior art.

Claims 16-20 are subject to interpretation under section 112, sixth paragraph.

In view of the above amendments and remarks about missing elements and lack of motivation to combine the references, it is believed that the claims are in

condition for allowance. Reconsideration of the application and allowance of the claims are respectfully requested.

Respectfully submitted,


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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office at (703) 872-9306 on December 13, 2004.


Grace J. Fishel

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Luis M. Ybarra
Serial No.: 10/627,225
Filed: July 25, 2003
For: Adjustable Extension
for Socket Wrenches

December 13, 2004
Group Art Unit 3723
Examiner: Hadi Shakei

APPLICANT'S INTERVIEW SUMMARY

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In compliance with 37 CFR § 1.333, applicant submits the following summary of a personal interview which occurred on December 8, 2004 between Examiner Hadi Shakei and Grace J. Fishel, applicant's attorney regarding the above-identified application.

The following items of information concerning the interview are submitted:

(1) Brief description of the nature of any exhibit shown or any demonstration conducted.

A working model of applicant's adjustable extension was exhibited.

(2) An identification of the claims discussed.

Independent claims 1, 11 and 16.

(3) An identification of the specific prior art discussed.

Clothier et al. '930, Condor '633, Newby et al. '397, McBride '866 and Mathews '015.

(4) An identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner.

Proposed amendments were e-mailed to the Examiner on December 2, 2004.

(5) A brief identification of the general thrust of the principal arguments presented to the examiner.

The arguments in the amendment e-mailed to the Examiner were presented orally.

(6) A general indication of any other pertinent matter discussed.

Not applicable.

(7) If appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the Examiner.

Agreement was reached that a "spring biased axle" in the window of the outer member for pivotal support of the pawl and handle extension, as shown in Fig. 5, is not disclosed or suggested by the prior art of record.

Respectfully submitted,

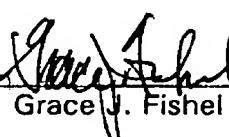


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